Information technology

Computer science department

Web service

Keystroke dynamics web service

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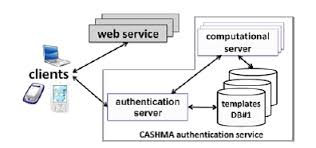
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Abstract

Human nature has led us to all this massive development, its mankind that came up with all the knowledge that we claim to have today, but it's also the human nature that sometimes goes astray, it is blinded by the temptation of knowledge, but the problem here that this knowledge is obtained in a deceptive way, a way that is outside the circle of trust, according to this the need for more data protection has risen. One of the processes with a high level of security is keystroke dynamic authentication which is a behavioral biometrics that can provide a good level of security. Security is a fundamental aspect of computer systems, especially those systems comprised of Web services .because of this in our project we will make a keystroke dynamics system as a web service that can be anything from simple requests to complicated business processes, available over the internet,self-contained, self-describing, modular application that can be published, located, and invoked across the web to achieve a great acceptance by the people.

Proposed Architecture

My system will consist of two service providers. The first one will authenticate the user before the login process and the second one will authenticate him after the login process to make sure that he is the right person not an impostor. The following figure shows how the services interact with the clients. Below is a description of each entity in the system:



**Client**

My client will be a Web application that invokes keystroke dynamics service operations for a high level of security.

**Service Providers**

**Web server subsystem**: is divided to, **data storage** that contains the user names, passwords and the templates and also the **security subsystem** (authentication service) which will check the password correctness in order to reject/accept the users for more security

**Security service**: it is divided into four main subsystems as the following:

1. Password analysis: this activity will check the password correctness in order to enter the user to the keystroke system.
2. Input analysis and extract features: while the user is typing he will provide the system a large amount of data from the way that he types on the keyboard, so the system will collect them to do some calculations.
3. Create template: from the features which the system has collected like the duration and the latency it will create a template for that will be saved in the database
4. Template comparison: the system will compare the present inputs of the user with the template of that user using the distance metric that gives us how far the inputs from the user inputs
5. Decision making: after the comparison stage the system will decide to accept the user or reject the impostor by using the decision rules

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Client

Php, Css, JavaScript, html languages.

Service provider

Implementation style will be SOAP.

Programming language will be Java.

Data layer MySQL (data base will be used to store the usernames, passwords, ids’ and templates of users)

And because we have chosen that the continuous keystroke dynamics so there will be 2 services the first one will be before the login process to make sure that he is not a hacker and the second one will be after the login to make sure that there is no one take his place.